

REMARKS

In response to the Office Action mailed March 17, 2006, the Applicants respectfully requests reconsideration. To further the prosecution of this Application, the Applicants submit the following remarks and have canceled claims. The claims as now presented are believed to be in allowable condition.

Claims 1-27 were pending in this Application. By this Amendment, claim 24 has been canceled. Claim 1 has been amended to include the content of cancelled dependent claim 24. Additionally, claims 6, 12, 18, and 19 have been amended to include the content of claim 24. Accordingly, claims 1-23 and 25-27 are now pending in this Application. Claims 1, 6, 12, 18, and 19 are independent claims.

Rejections under §102 and §103

Claims 1-4, 6-9, 11-15, 17-23, 26, and 27 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,711,019 to Manabe et al. Claims 5, 10, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Manabe in view of U.S. Patent No. 5,343,362 to Solberg. Claims 24 and 25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Manabe. The Applicants respectfully traverse each of these rejections and request reconsideration. The claims are in allowable condition.

Taking claim 1 as an example claim, claim 1 recites an air stream distribution apparatus that includes a base configured to couple with a circuit board where the base defines a first end and a second end. The apparatus also includes a plurality of deflectors in communication with the base and arranged in series between the first end and the second end defined by the base where each of the plurality of deflectors defines a leading edge. The leading edge of each of the plurality of deflectors defines a height relative to a plane defined by the base with the height defined by the leading edge of each deflector increasing along an

air stream direction between the first end and the second end defined by the base. Each of the plurality of deflectors is configured to direct a corresponding portion of an air stream toward a respective area of the circuit board. Each of the plurality of deflectors is also configured to direct a corresponding portion of an air stream flowing substantially parallel to the circuit board toward the at least one circuit board component of the circuit board.

Manabe generally relates to a fitting for mounting a cooling apparatus to a micro-processing unit (MPU) and illustrates in Fig. 1 a heat sink-fan assembly that utilizes the fitting. The assembly includes a heat sink 3 fixed to an MPU 2 via the mounting fitting 5. The heat sink 3 includes a base part 3a and a fin part 3b that contacts the MPU 2. As the MPU 2 generates heat, the heat sink receives the heat from the MPU 2 and radiates the heat to the ambient air (column 4, lines 16-20). The assembly also includes a fan 4 that forcibly air-cools the heat sink 3 (column 4, line 21).

Because claim 1 has been amended to include the content of cancelled claim 24, the rejection of claim 24 will be addressed below.

With respect to claim 24, the Office Action indicates, on page 9, that Manabe does not teach that the “deflectors” are configured to direct a corresponding portion of an air stream flowing substantially parallel to the circuit board toward the at least one circuit board component of the circuit board.” The Office Action further states, on page 10, that:

It would have been obvious to one of ordinary skill in the art at the time of the invention to place the stream of air parallel (on the side) to the component and thus cause the deflectors to direct corresponding portion of an air stream following substantially parallel to the circuit board towards at least on circuit board component of the circuit board...

While the Applicants do not agree with, or acquiesce to, the Office Action's contention regarding the obviousness of the placement of air parallel (on the side) to the component, If it were obvious to do so, Manabe does not teach all of the elements claimed by the Applicants in claim 1. For example, Manabe does not teach or suggest deflectors "configured to *direct a corresponding portion of an air stream* flowing substantially parallel to the circuit board *toward the at least one circuit board component* of the circuit board."

For example, Fig. 1 of Manabe shows the heat sink 13 having a base 3a and fins 3b. Each fin 3b is disposed on the base 3a such that adjacent fins define gaps, such as illustrated in Manabe's sectional views of the heat sink 13 provided in Figs. 3A - 3C.

Based upon the Manabe's Figures 1 and 3A-3C, there is no case where, if an air stream were to originate from the side of the heat sink (e.g., parallel to the circuit board, as claimed by the Applicants), that the fins of Manabe would *direct a corresponding portion of the air stream toward the at least one circuit board component*, as claimed by the Applicants

For example, assume an air stream originates from the right side of the heat sink 13 with reference to Manabe's Fig. 1 and flows from right to left (e.g., into the page with reference to Manabe's Figs. 3A - 3C). In such a configuration, the air stream would flow through the gaps defined by adjacent fins on the heat sink. The fins of Manabe would not direct any portion of the air stream toward the MPU but instead would act as a conduit allowing the air stream to bypass the MPU. Alternately, assume the air stream originates from the rear of the heat sink 13 with reference to Manabe's Fig. 1 and flows from back to front (e.g., from right to left with reference to Manabe's Figs. 3A - 3C). In such a configuration, rather than directing a portion of the air stream towards the circuit board component, as

claimed by the Applicants, the fins would instead block the flow of air. In either case, Manabe does not teach or suggest, and in fact teaches away from the fins directing a corresponding portion of the air stream toward the at least one circuit board component, as claimed by the Applicants.

Because Manabe does not teach or suggest all of the limitations of the Applicants' amended claim 1, for the reasons stated above, claim 1 patentably distinguishes over the cited prior art, and the rejection of claims 1 and 24 under 35 U.S.C. §103(a) should be withdrawn. Additionally because independent claims 6, 12, 18, and 19 have been amended to include the content of claim 24, for the reasons stated above, claims 6, 12, 18, and 19 patentably distinguish over the cited prior art and the rejection of claims 6, 12, 18, and 19 should be withdrawn. Accordingly, claims 1, 6, 12, 18, and 19 are in allowable condition. Further, claims 2-5 and 25-27, which depend upon claim 1, claims 7-11, which depend upon claim 6, claims 13-17, which depend upon claim 12, and claims 20-23, which depend upon claim 19 are also allowable for the same, and other, reasons.

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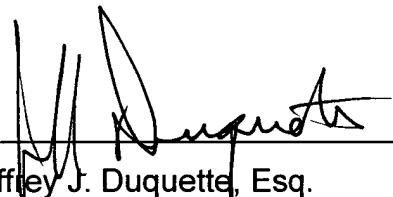
Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Response, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

The Applicants hereby petition for any additional extension of time which is required to maintain the pendency of this case.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 616-2900, in Westborough, Massachusetts.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jeffrey J. Duquette", is written over a horizontal line.

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